AMENDMENTS TO THE CLAIMS

The following listing of claims replaces all prior listings, and all prior versions, of claims in the application.

LISTING OF CLAIMS:

1. – 4. (Cancelled).

5. (Previously Presented) The inspection apparatus using nuclear magnetic resonance according to claim 6, wherein said controller is programmed to control repeating of said (2) to said (3), and collecting of said nuclear magnetic resonance signals used for said image reconstruction in said second pulse sequence based on comparison of a value of said similarity coefficient with a predetermined threshold value.

6. (Currently Amended) An inspection apparatus using nuclear magnetic resonance comprising:

a controller for controlling a pulse sequence ~~applying~~ which applies a radiofrequency magnetic field and a magnetic field gradient to a living body placed in a static magnetic field to detect a nuclear magnetic resonance signal produced from said living ~~body~~ body; and

an arithmetic processor for performing an image reconstruction of an imaging section using said detected nuclear magnetic resonance signal ~~to perform image reconstruction of an imaging section~~,

wherein said controller ~~performs~~ is configured to:

_____(1) control application of a first pulse sequence detecting said nuclear magnetic resonance signal when ~~in the state that~~ said living body stops exhalation or

inhalationinspiration, control of a first pulse sequence detecting said nuclear magnetic resonance signal;

(2) control application of said first pulse sequence once in the a state that said living body breathes, control of executing once said first pulse sequence; and

(3) control of repeating repeated application of a second pulse sequence for detecting said nuclear magnetic resonance signal at predetermined repetition time intervals,

wherein said arithmetic processor performs is configured to:

(a) perform arithmetic processing of acquiring a reference projection of said imaging section from said nuclear magnetic resonance signal detected in said first pulse sequence of said (1)when said living body stops exhalation or inhalation;

(b) perform arithmetic processing of acquiring a projection of said imaging section from said nuclear magnetic resonance signal detected in said first pulse sequence of said (2)when said living body breathes; and

(c) perform arithmetic processing of determining a similarity coefficient between said projection and said reference projection, said similarity coefficient being scalar, and

wherein said controller performs is further configured to (4) collect or discard control of collecting said nuclear magnetic resonance signals from used for said image reconstruction in said second pulse sequence based on said similarity coefficient;, and reconstructing said image using the collected nuclear magnetic resonance signals, and

wherein said projection is one-dimensional, and said reference projection is one-dimensional, and

~~wherein said controller is programmed to apply an average of projections of the imaging section acquired from the nuclear magnetic resonance signals detected by repeating the first pulse sequence as the reference projection~~.

7. (Currently Amended) The inspection apparatus using nuclear magnetic resonance according to claim 6, wherein:

said controller performs ~~(1a) in the state that said living body stops exhalation, control of a first pulse sequence detecting said nuclear magnetic resonance signal; said arithmetic processor performs (a) arithmetic processing of acquiring a reference projection of said imaging section from said nuclear magnetic resonance signal detected in said first pulse sequence of said (1a); and~~

~~said controller performs (4) control of collecting said nuclear magnetic resonance signals used for said image reconstruction in said second pulse sequence~~ said (4) when a value of said similarity coefficient is larger than a predetermined threshold value.

8. – 9. (Cancelled).

10. (Currently Amended) The inspection apparatus using nuclear magnetic resonance according to claim 7, wherein: ~~between control of said (1a) and control of said (2),~~

said controller ~~performs (1b)~~ is configured to (1a) control repeated application of said first pulse sequence at said predetermined repetition time intervals in the state that said living body breathes~~, control of repeating said first pulse sequence at said predetermined repetition time intervals~~, and

said arithmetic processor ~~performs~~ is further configured to perform arithmetic processing of determining a frequency of appearance of said similarity coefficient between a projection of said imaging section acquired from said nuclear magnetic resonance signals detected by repeating said first pulse sequence of said ~~(1b)~~ (1a) and said reference projection and decides, as said predetermined threshold value, said similarity coefficient in which the sum of said frequency of appearance in a part in which said similarity frequency is close to 1 is 1/m of the sum of said frequency of appearance where m is a positive number of 3 or above.

11. (Cancelled)

12. (Currently Amended) The inspection apparatus using nuclear magnetic resonance according to ~~claim 11~~claim 10, wherein said similarity coefficient in which the sum of said frequency of appearance in a part in which said similarity frequency is close to 1 is 1/m of the sum of said frequency of appearance where m is a positive number of 3 or above is decided as said predetermined threshold value.

13 - 21. (Cancelled).

22. (Previously Presented) The inspection apparatus using nuclear magnetic resonance according to claim 1, wherein a moving average of linear correlation coefficients is acquired as the similarity coefficient.

23. (Cancelled)

24. (Cancelled)

25. (Previously Presented) The inspection apparatus using nuclear magnetic resonance according to claim 6, wherein the arithmetic processor calculates a moving average of the similarity coefficients.

26. (New) The inspection apparatus using nuclear magnetic resonance according to claim 6, wherein said controller is programmed to apply an average of projections of the imaging section acquired from the nuclear magnetic resonance signals detected by repeating the first pulse sequence as the reference projection

27. (New) An inspection apparatus using nuclear magnetic resonance comprising:

a controller for controlling a pulse sequence which applies a radiofrequency magnetic field and a magnetic field gradient to a living body placed in a static magnetic field in order to detect a nuclear magnetic resonance signal produced from said living; and

an arithmetic processor for performing an image reconstruction of an imaging section using said detected nuclear magnetic resonance signal;

wherein said controller is configured to:

apply a first pulse sequence, during a breath-holding period, to determine a reference nuclear magnetic resonance signal,

apply the first pulse sequence, while breathing, to determine a first nuclear magnetic resonance signal,

apply a second pulse sequence a predetermined number of times, while breathing, to determine a plurality of second nuclear magnetic resonance signals, and

repeat application of the first pulse sequence while breathing and application of the second pulse sequence for a predetermined length of time, and

wherein said arithmetic processor is configured to:

determine a reference signal corresponding to application of the first pulse sequence during the breath-holding period,

determine a first signal corresponding to each application of the first pulse sequence while breathing,

determine a plurality of second signals corresponding to each application of the second pulse sequence a predetermined number of times,

compare each second signal to the reference signal,

determine a similarity coefficient for each second signal based on comparison to the reference signal,

save or discard second nuclear magnetic resonance signals based on a corresponding similarity coefficient, and

reconstruct the image using the saved second nuclear magnetic resonance signals and the first nuclear magnetic resonance signals.

28. (New) The inspection apparatus using nuclear magnetic resonance according to claim 27, wherein:

said controller is configured to apply the first pulse sequence, during the breath-holding period, a plurality of times during one heartbeat; and

said arithmetic processor is configured to:

determine a plurality of reference signals corresponding to application of the first pulse sequence during the breath-holding period,

calculate a average reference signal, and

compare each second signal to the average reference signal.

29. (New) The inspection apparatus according to claim 27, wherein said arithmetic processor is further configured to:

store all the first signals and second signals determined from repeated application of the first pulse sequence and the second pulse sequence prior to comparing each second signal; and

compare each stored second signal to the reference signal.

30. (New) A method of creating images of an imaging section using nuclear magnetic resonance comprising the sequence independent steps of:

applying a first pulse sequence, during a breath-holding period, to determine a reference nuclear magnetic resonance signal,

applying the first pulse sequence, while breathing, to determine a first nuclear magnetic resonance signal,

applying a second pulse sequence a predetermined number of times, while breathing, to determine a plurality of second nuclear magnetic resonance signals;

repeating the steps of applying the first pulse sequence while breathing and applying the second pulse sequence for a predetermined length of time;

determining a reference signal corresponding to the first pulse sequence applied during the breath-holding period;

determining a first signal corresponding to each of the first pulse sequences applied while breathing;

determining a plurality of second signals corresponding to each of the second pulse sequences applied a predetermined number of times;

comparing each second signal to the reference signal;

determining a similarity coefficient for each second signal based on the step of comparing;

saving or discarding second nuclear magnetic resonance signals based on a corresponding similarity coefficient; and

reconstructing the image using the saved second nuclear magnetic resonance signals and the first nuclear magnetic resonance signals.